REMARKS/ARGUMENTS

Status of Claims

Allowance of claims 2, 9-13 and 15 is gratefully acknowledged.

Claims 1-15 remain in the application.

35 U.S.C 103 Claim Rejections

The Examiner has rejected claims 1 and 14 under 35 U.S.C. 103(a) as being unpatentable over Marrow (U.S. Patent No. 5,938,790) in view of Soljanin (U.S. Patent No. 6,188,337).

The Examiner states that with regard to claim 1, Marrow discloses a method of determining whether the bit disparity in a data stream is acceptable (col. 2, lines 63-67 and col. 3, lines 1-8), comprising the steps of: sampling the data stream (col. 1, lines 41-42 and col. 4, lines 14-16), detecting a number of samples of the data stream which have a predetermined one of two logical values within a time period (col. 4, lines 40-44, col. 5, lines 4-8), calculating a ratio of the number of samples detected which have the predetermined logical value to the number of samples considered.

The Examiner concedes that Marrow does not teach the additional features of counting a number of samples of the data stream which are being considered within the time period and comparing the calculated ratio with a predetermined acceptable threshold range, but alleges that these features can be found in Soljanin in the abstract and in column 1 at lines 15-18, lines 33-35 and lines 52-65. On the basis of this understanding, the Examiner states that it would have been obvious to modify Marrow by incorporating the additional features disclosed by Soljanin in order to spectrally adjust the encoded signal to suppress dc power and improve the power spectrum.

It is respectfully submitted that the Examiner has misunderstood what Soljanin discloses. Soljanin does not, in fact, disclose either counting a number of samples of the data stream which are being considered within the time period or comparing the calculated ratio with a predetermined acceptable threshold range with reference to the particular locations in the patent as suggested by the Examiner.

Soljanin does disclose determining a disparity for a codeword, comparing a quantitative value associated with the determined disparity with a quantitative value associated with a particular grouping, identified as groups A, B_0, B_1, C and D, and assigning that codeword with the appropriate group (Figures 1 and 3A and column 3, lines 4-10). However, this cannot be considered comparing the calculated ratio with a predetermined acceptable threshold range because the disparity value is not a ratio, but is a difference value of the number of 1's and 0's, and the individual groups are not threshold ranges, but are distinct values, i.e. disparity of 0, +/-2, +/-4, +/-6, +/-8.

The particular locations in the patent to which the Examiner points to show that the additional features are disclosed by Soljanin, in fact do not contain the additional features. For example, the abstract discloses splitting a 16-bit work into two 8-bit word and mapping those two 8-bit words to 9-bits words respectively. The abstract also discloses that a decision to invert a mapping is dependent upon a running digital sum (RDS). A RDS is a sum of all the 1's in a data stream, not all bits in a data stream. There is clearly no reference to counting every sample, or even every bit that is being considered within a time period. There is also clearly no reference to comparing a calculated ratio with a predetermined acceptable threshold range as there is no disclosure of any ratio being determined.

Furthermore, in column 1, lines 33-35 state "It should be noted that actual two-level signals may be transmitted as sequences of 1's and 0's, or as sequences of +1's and -1's, or in various other equivalent representations". Again, there is clearly no reference to counting every sample, or even every bit that is being considered within a time period. There is also clearly no reference to comparing a calculated ratio with a predetermined acceptable threshold range as there is no disclosure of any ratio being determined.

In addition, in column 1, lines 52-65 describe the concept of disparity, which is essentially an unequal number of 1's and 0's in a codeword. Once again, there is no reference to counting every sample, or even every bit that is being considered within a time period. There is also clearly no reference to comparing a calculated ratio with a predetermined acceptable threshold range as there is no disclosure of any ratio being determined.

In addition to Soljanin not teaching the additional limitations as described above, it is

noted that the Examiner has also not indicated in the Office Action where Marrow discloses calculation of a ratio. As submitted in the previous Office Action response filed on May 21, 2004, Marrow does not disclose calculating a ratio of samples detected which have the predetermined logical value to the number of samples considered. Marrow discloses an N-bit codeword is applied to a Running Digital Sum (RDS) counter. The RDS counter is reset at the beginning of each codeword by an N-bit counter. The N-bit counter counts the number of incoming bits and provides a reset signal at the end of every codeword. The RDS counter counts the number of logic ones in each codeword. The output of the RDS counter, which is equal to the number of logic ones in the codeword is supplied to a comparator. The comparator compares the output of the RDS counter with a "fixed value or bias labelled P" (col. 6. Line 7). Marrow is not calculating a ratio of a total number logic ones to a total number of samples considered, but is performing a comparison of the number of logic ones to a designated number of logic ones that should exist in the codeword. Marrow defines a binary threshold based on this comparison. If the number of logic ones that are counted is in agreement with the designated number of logic ones the codeword is passed to the next stage of the system without change. However, if the number of logic ones is not equal to the designated number of logic ones then the codeword is directed to another part of the system, which is capable of performing error correction.

Marrow does not disclose all the features which are alleged by the Examiner as discussed above. Soljanin does not disclose the additional features as alleged by the Examiner and the Examiner states that these additional features are not taught by Marrow. Based on at least these two reasons it is submitted that the Examiner has not satisfied a first criterion for establishing a prima facie case of obviousness, namely that either alone or in combination, all the features of the above-identified claims are disclosed by the cited references. In addition, as Soljanin does not disclose the additional features as suggested by the Examiner there is no motivation to combine the references. As such the Examiner has not satisfied a second criterion for establishing a prima facie case of obviousness with regard to the above-identified claims, namely that there must be motivation to combine the cited references. It is respectfully requested that the Examiner reconsider and withdraw the 35 U.S.C. 103(a) rejection to claim 1.

Claim 14 recites a computer-readable medium for storing computer-executable instructions for performing the method recited in claim 1. Claim 14 also recites "counting a

number of samples of the data stream which are being considered within the time period and comparing a calculated ratio with a predetermined acceptable threshold range". For the same reasons as described above with respect to claim 1, it is submitted that claim 14 is non-obvious with respect to the cited references.

The Examiner has rejected claims 3 to 8 under 35 U.S.C. 103(a) as being unpatentable over Marrow in combination with Soljanin as applied to claim 1, in view of Way (U.S. Patent No. 6,583,903).

The Examiner states that with regard to Applicant's claim 3, all the limitations of claim 1 are inherited from claim 1.

The Examiner further concedes that Marrow does not disclose a sub-sampler for sub-sampling the data stream. The Examiner does allege that Way discloses an optical data communications link comprising a sub-sampler for sub-sampling the data stream as found in Figure 1, col. 4, lines 50-63 and col. 5, lines 13-16 and 24-26.

It is respectfully submitted that what is recited in claim 3 by Applicant patently distinguishes over Marrow, Soljanin, and Way when the references are considered each alone or any in combination thereof, as Marrow and Soljanin do not disclose all that is taught in claim 3, namely counting a number of samples which are being considered within the time period, determining a ratio of the number of samples detected by the detector which have the corresponding predetermined logical value to the number of samples considered, and comparing the ratio with a predetermined acceptable threshold range, for the same reasons discussed above with respect to claim 1. As such, the Examiner has not satisfied the first criterion for establishing a prima facie case of obviousness.

Claims 4 to 8 are dependent on claim 3 and as claim 3 should be allowable for the reasons described above, claims 4 to 8 should also be allowable.

As claims 3 to 8 are non-obvious with respect to the combination of Marrow, Soljanin, and Way, it is respectfully submitted that the Examiner reconsider and withdraw the 35 U.S.C. 103(a) rejection.

In view of the forgoing, early favorable consideration of this application is earnestly

solicited.

Respectfully submitted,

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